

### **REMARKS**

This responds to the Office Action mailed on April 18, 2006, and the references cited therewith.

Claim 46 is amended, no claims are canceled or are added. Claims 9-14 and 46-49 are now pending in this application.

#### **Double Patenting Rejection**

Claims 9-12, 41 and 43 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-4 and 8-11 of co-pending Application No. 10/643,567.

Claims 46-49 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-4 and 8-11 of co-pending Application No. 10/643,567.

Claims 9, 14, 40, 41, 44, 45 and 50-52 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-4 of co-pending Application No. 10/701,140.

Claims 9-14 and 40-52 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-46 of U.S. Patent No. 6,607,599.

Claims 9-14 and 40-52 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-24 of U.S. Patent No. 6,641,669.

Claims 9-14 and 40-52 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-77 of U.S. Patent No. 6,669,781.

Claims 9-13 and 40-52 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-24 of U.S. Patent No. 6,599,365.

A Terminal Disclaimer in compliance with 37 C.F.R. 1.321(b)(iv) will be promptly submitted once the Patent Office acknowledges the presence of patentable subject matter and the

scope of the allowable claims is finalized. Applicants submit that it is premature to require submission of a Terminal Disclaimer when all the claims are under prior art based rejections.

*§112 Rejection of the Claims*

Claims 46-49 were rejected under 35 U.S.C. § 112, first paragraph, as lacking adequate description or enablement. Applicant respectfully traverses.

Applicant has amended claim 46 to call for “a coating applied to the bottom surface of the sheet” to clarify the claim so that it no longer calls for “a coating applied to at least one top or one bottom surface.” Applicant believes that the amendment fully responds to the points raised in the rejection and respectfully requests reconsideration of the amended claim and withdrawal of the rejection of claims 46-49.

*§102 and §103 Rejection of the Claims*

1. Claims 9, 14, 40, 45 and 50-52 were rejected under 35 U.S.C. § 102(b) as anticipated by Pollack U.S. 3,374,707, (hereinafter simply “Pollack”). Applicant respectfully traverses the rejection for the reasons stated below.

Pollack relates to an orifice plate for ink jet printing machines<sup>1</sup>. While the Abstract states that the plate is “bilaminar with nickel being plated onto copper to form a substantially rigid structure” a more careful reading of the patent reveals that after the orifice plate is formed by plating nickel onto a copper substrate secured to a support plate, orifices are formed by etching selected areas and “[t]hereafter, the entire plate is passivated by being gold plated” to form the substantially rigid highly accurate support plate.<sup>2</sup>

*Regarding Claims 9 and 40:*

Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration. “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.”

*Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) “The identical invention must be shown in as complete detail as is contained in the ...

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<sup>1</sup> Pollack, Title.

<sup>2</sup> Pollack, col. 4, lines 45-54.

claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Applicant respectfully submits that the Office Action did not make out a *prima facie* case of obviousness because the cited portions of Pollack appear to lack any disclosure of a semiconductor die stencil with a bottom surface having a surface tension less than a surface tension of the top surface *and less than a surface tension of the side surfaces* as presently recited or incorporated in claim 9 and claim 40 which is dependent upon it. Instead, Pollack actually relates to a gold plated structure including an aperture for distribution of ink for an ink jet printer. In the completed Pollack structure, the entire structure is gold plated<sup>3</sup>. By contrast, claim 9 recites a bottom surface having a surface tension less than a surface tension of the top surface and less than a surface tension of the side surfaces. Pollack, since the entire plate is gold plated, cannot meet any of claim features calling for differing surface tensions on different surfaces of the device.

Pollack, as a structure which is entirely gold plated, has at least the same deficiencies as a reference against claims 40, 45, and 50-52 as it does relative to claims 9 and 14 as discussed above.

Reconsideration and withdrawal of the anticipation rejections under Pollack are respectfully requested.

2. Claims 9-13, 41, 43 and 46-49 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Dreyfus (U.S. 3,357,342) in view of Cahne (U.S. 3,008,601). Applicant respectfully traverses the rejection for the reasons stated below.

In order support the burden of proof for a *prima facie* showing of obviousness, the Office Action cannot rely on non-analogous art, such as is the case here. The MPEP states the requirement that art be analogous is stated in the MPEP as follows:

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<sup>3</sup> Pollack, col. 4, lines 51-52.

**2141.01(a) Analogous and Nonanalogous Art [R-3]**

**I. < TO RELY ON A REFERENCE UNDER 35 U.S.C. 103, IT MUST BE ANALOGOUS PRIOR ART**

The examiner must determine what is "analogous prior art" for the purpose of analyzing the obviousness of the subject matter at issue. "In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). See also *In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986); *In re Clay*, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992) ("A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem."); *Wang Laboratories Inc. v. Toshiba Corp.*, 993 F.2d 858, 26 USPQ2d 1767 (Fed. Cir. 1993); and *State Contracting & Eng'g Corp. v. Condotte America, Inc.*, 346 F.3d 1057, 1069, 68 USPQ2d 1481, 1490 (Fed. Cir. 2003) (where the general scope of a reference is outside the pertinent field of endeavor, the reference may be considered analogous art if subject matter disclosed therein is relevant to the particular problem with which the inventor is involved).

In order to use patents as a basis for an obviousness rejection, they must either be 1) in the field of the applicant's endeavor or 2) be reasonably pertinent to the particular problem with which the inventor was concerned. It is quite clear that citing Dreyfus and Cahne in this situation satisfies neither of these requirements.

First, Dreyfus is clearly not in the same field as the invention claimed. Dreyfus is an apparatus for cooking frozen vegetables. In contrast, claim 9 presently recites in part: "A semiconductor die stencil" and the other claim features are related to the particular nature and characteristics of such apparatus. Claim 46 presently recites in part: "a stainless steel semiconductor die stencil sheet." Cooking apparatus is not analogous to a semiconductor die stencil -- the two do not share even remotely similar properties. Thus, Dreyfus is not analogous art because its subject matter that cannot be considered of the same field as the subject matter recited in claims 9 and 46.

Cahne is also clearly not analogous art since it is clearly not in the same field as the claimed subject matter. Cahne relates to application of a coating to a cooking utensil so food doesn't stick to it. In contrast, In contrast, claim 9 recites in part: "A semiconductor die stencil" and claim 46 recites in part: "a stainless steel semiconductor die stencil sheet." A cooking utensil is not analogous to a stencil, and the Office Action provides no clue or suggestion that they share remotely similar properties.

Applicant respectfully submits that the rejection does not make out a prima facie case of

obviousness because of the failure demonstrate that Cahne and Dreyfus are analogous art. Even if they were considered to be analogous art, the same above factors also show that there is no suggestion of motivation to combine them as the Office Action suggests.

*Regarding claims 9-13, 41, and 43:*

The combination of patents cited in support of the rejection of claim 9 does not disclose each and every element recited in claim 9. Claim 9 presently recites: "A semiconductor die stencil having a top surface, a bottom surface, and one or more side surfaces, the bottom surface having a surface tension less than a surface tension of the top surface and less than a surface tension of the side surfaces."

Instead of a die stencil, Cahne describes a cooking utensil. Instead of differing surface tensions between the bottom and the top and sides of a stencil, Cahne describes coating applied to the top only of an apparatus. The cited patents neither teach nor suggest a semiconductor stencil with a surface tension which differs between the bottom and the top and sides of a stencil, as recited in claim 9, because neither patent has any disclosure of apparatus with a differing surface tension on specified surfaces of an apparatus. As a result, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 9. Claims 10-13, 41 and 43 incorporate all elements recited in claim 9, and more. Since claim 9 is believed allowable for the reasons set forth above, Applicant respectfully requests removal of the rejection of claims 10-13, 41 and 43 as well.

*Regarding claims 46-49:*

The patents cited in support of the rejection of claim 46 do not disclose each and every element recited in claim 46. Claim 46 presently recites in part: "a coating applied to at least one top or one the bottom surface of the sheet to retard spreading of the printable adhesive onto the at least one top or one bottom surface of the sheet without obstruction of the flow of printable adhesive through the apertures." The Office Action admitted that Dreyfus does not disclose any coating as recited in claim 46. The references do not teach or suggest a coating applied to the bottom surface, as recited in claim 46 because neither patent teaches or suggests a coating applied to a bottom surface.

Furthermore, amended claim 46 recites "a coating applied to the bottom portion of the sheet to retard spreading of the printable adhesive onto the bottom surface of the sheet without

obstruction of the flow of printable adhesive through the apertures." In contrast, neither Cahne nor Dreyfus include any disclosure of a coating that retards the spread of adhesive.

The cited patents do not teach or suggest a coating that retards spreading of printable materials or that does not obstruct the flow of printable adhesive through the apertures onto the die. In support of the obviousness rejection, the Office Action states:

"The recitation of the intended end use of the claimed apparatus/device to be aligned above a die such that the bottom surface of the claimed apparatus/device faces the die and the apertures of the claimed invention define a desired pattern of application of a printable adhesive does not structurally further limit the claimed device/apparatus over the above recited combination of references since Dreyfus in view of Cahne teaches each of the structural elements of the claimed apparatus/device."

Applicant respectfully disagrees. Claim 46 recites in part: "a plurality of apertures in the sheet of material defining a desired pattern for application of a printable adhesive." Contrary to the Office Action's assertion, this plurality of apertures that define a pattern is a structural element, not a method of use, because the plurality of apertures in Cahne are uniform apertures incapable of defining a pattern as complex as is needed to apply an adhesive material to a semiconductor die. Thus, Cahne does not disclose the structural limitation of a sheet of material defining a desired pattern for application of a printable adhesive.

In support of its position, the Office Action cites *Ex parte Masham* (hereinafter *Masham*). 2USPQ 2d 1647. "Note it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations." Applicant respectfully disagrees that *Masham* is applicable to the subject matter recited in claim 46. In *Masham*, the Board of Patent Appeals and Interferences held that a mixing apparatus claim was obvious over the prior art because the only difference over the prior art is that the mixing means employed was only partially submerged, while the disputed claim fully submerged the mixing means. Clearly in *Masham* the difference over the prior art was only a limitation on the manner in which the claimed apparatus is intended to be employed, it simply provided for an obvious adjustment, lowering the mixing means. In contrast, the subject matter recited in claim 46 is not an analogous limitation. First, unlike *Masham* where the prior art device was entirely capable of being employed in the recited manner by simply lowering the mixing apparatus, as previously

discussed the apertures of Dreyfus are incapable of providing the pattern required to apply adhesive to a semiconductor die. Second, unlike *Masham* where the manner of use was the only difference over the prior art, Cahne doesn't teach application of a coating to a sheet of material, Cahne discloses application of a coating to a cooking utensil. Third, neither reference discloses application of a coating to the bottom of the apparatus.

Also in support of its position, the Office Action cites *Hewlett-Packard Co. v. Bausch & Lomb Inc.* Applicant respectfully disagrees with the Office Action's interpretation of *Hewlett-Packard* (hereinafter *HP*). In *HP*, the court determined whether one device claim was invalid because it was obvious over another device claim. Two patents were at issue in *HP*. Both dealt with X-Y plotters used to create a two dimensional plot such as a chart or graph. Yeiser, which existed before the LaBarre patent, used a knurled roller to pull paper along while the device prints a plot. The only difference between the LaBarre and Yeiser patents is that LaBarre uses a gritted roller to pull paper along while the device prints a plot.

The assignee of the Yeiser patent argued that although there are functional differences between the knurled roller and the gritted roller, the fact they have the same operational function should be enough to render the LaBarre patent obvious in comparison to the Yeiser device simply because both pull paper along in order to print a plot on the paper. The court found against this argument, stating that "there is no requirement... that *HP* show "operational differences" of the claimed device over the prior art. Claim 1 of LaBarre is an apparatus claim, and apparatus claims cover what a device is, not what a device does."

It can be readily seen that *HP* is not applicable to the claimed subject matter. First, *HP* stands for the proposition that a lack of operational differences cannot provide a basis for an obviousness rejection. If anything, *HP* supports Applicant's assertion that the claimed subject matter is not obvious in view of the cited combination of patents. The functional difference between the knurled roller and the gritted roller in dispute in *HP* is very slight in comparison to the differences which are evident between Cahne and Dreyfus (alone or in the proposed combination) and the subject matter recited in claim 46. Cahne discloses uniform apertures, while claim 46 recites a plurality of apertures defining a desired pattern for application of a printable adhesive. Unlike the rollers of *HP*, claim 46 recites distinct structural differences over the cited references.

For at least the reasons stated above, Applicant respectfully requests removal of the rejection of claim 46. Claims 47-49 all incorporate all the elements recited in claim 46, and more. Claim 46 is believed allowable. As a result, Applicant respectfully requests removal of the rejection of claims 47-49.

3. Claims 9-14 and 40-45 were rejected under 35 U.S.C. § 102(b) for anticipation by Cairncross (U.S. 5,447,757).

Example 3 of Cairncross has a polyimide film with a silver screen pattern image thereon. The conducting silver stencil screen pattern is electroplated with nickel in a bath (col 12, lines 5-9) and the polyamide is etched open through the nickel screen pattern (col. 12, lines 12-31) to leave a nickel polyamide laminate (col. 12, lines 29-31).

In the portion of the Cairncross disclosure relied upon in support of the rejection of claim 9-14 and 40-45 in the Office Action, there is no indication that the described application of the “polymeric ledge” results in a stencil as claimed where the side walls of the apertures have a first surface tension and the bottom surface of the stencil has a second surface tension that is less than the first surface tension. As stated in MPEP 2131: “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference”. Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration. Since all of the elements of independent claims 9 and 10 have not been shown to be present in the cited patent, such a rejection cannot be sustained against them or claims 11-14 and 41-45 which are dependent upon them and are patentable for the same reasons.

4. Claims 46-49 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Japanese Patent No. 59-76868 in view of Hefele (U.S. 5,460,316).

In the previous section Applicants explained what elements of claims 46-49 were missing in the Japanese patent. The Office Action, apparently conceding the difficulties of applying the Japanese patent in a single reference obviousness rejection, now combines it here with Hefele. Applicants suggests that the rejection does not meet the requirements of showing a motivation to combine multiple patent references as well as showing evidence of a likelihood of success if the



teachings are combined as proposed. Applicants will explain in more detail below that the deficiencies of the Japanese patent as a reference are not remedied by Hefele if combined with the Japanese patent as the Office Action proposes.

As discussed above, both the Japanese Patent and Hefele show structures where the added coating layer is on all surfaces of the mask or stencil. Neither teaches that there is any advantage to having the surface tension of one surface different from that of another surface.

The cited Hefele patent relates to a wear resistant stencil with a wear resistant coating 18, 20 and 22 applied to the respective top, bottom and side wall surfaces of the stencil 10. Applicant does not see that Hefele has any teaching of coating some, but not all of the surfaces of the stencil 10. This is evident from Hefele FIG. 3 which shows all surfaces of the stencil as coated. Claims 9 and 10 require coating of some, but not all of the surfaces. Since Hefele does not show the features missing from the Japanese patent, the Office Action fails to make out a *prima facie* showing of obviousness.

Reconsideration and allowance of claims 46-49 as amended is respectfully requested.

5. Claims 46-49 were rejected under 35 U.S.C. § 102(b) for anticipation by Pryor et al. (U.S. 4,269,874).

Pryor relates to a rotating disk 20 having several stencil openings representing characters to be formed by the stencil. The patent states<sup>4</sup> that "A rotating Teflon or other non-stick coated aluminum stencil disc 20 is provided having stencil characters 26 cut through the disc around its periphery as shown in FIG. 2." The disc is spun at a high speed so that ink on the surface is "spun-off"<sup>5</sup> The Office Action does not state where in Pryor there is shown "a coating applied to to the bottom surface of the sheet to retard spreading of the printable adhesive onto the bottom surface of the sheet" as claim 46 requires.

Actually, Pryor relies upon the Teflon coating to facilitate the spreading of ink across the surface to remove it as the structure spins. In claim 46, the coating is applied "to retard" spreading of the adhesive material across the surface. Thus the coating "to retard spreading" of claim 46 is not the high surface tension Teflon coating of Pryor but is a coating having a surface

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<sup>4</sup> U.S. Patent 4,269,874 to Cairncross, Col. 3, lines 18-23.

<sup>5</sup> *Op cit*, Col 5, lines 18-20.

lower than that of the base material. The coating material shown in Pryor acts opposite to the coating material of claim 46. Pryor does not show all elements of claims 46-49.

The Office Action fails to set forth a *prima facie* showing of anticipation of claims 46-49. Reconsideration and allowance of those claims is requested.

**CONCLUSION**

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 373-6970 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

TONGBI JIANG ET AL.

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September 15, 2006

By

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop Amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 18<sup>th</sup> day of September, 2006..

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